

- 1 1. An apparatus for decompressing video data, comprising:
2 a start code detector to convert a portion of a stream of video data into a
3 stream of data tokens in response to detecting a start code sequence in said stream
4 of video data; and
5 a pipeline having stages and being capable of decoding video data , the start
6 code detector being coupled to send the data tokens to the pipeline.
- 1 2. The apparatus of claim 1, wherein a plurality of the stages of said
2 pipeline have operating modes responsive to the format of said tokens.
- 1 3. The apparatus of claim 1, further comprising an inserter of search
2 mode tokens to transmit search mode tokens into the stream of video data.
- 1 4. The apparatus of claim 1, wherein the start code detector is capable of
2 searching for video start codes complying with different formats.
- 1 5. The apparatus of claim 4, wherein said formats include formats
2 complying with at least two of the video standards selected from the group consisting
3 of JPEG, MPEG, and H.261.
- 1 6. The apparatus of claim 3, wherein the start code detector ignores video
2 data until a video start code is found in response to receiving one of the search
3 mode tokens.
- 1 7. The apparatus of claim 1, further comprising:
2 two-wire interfaces coupling the consecutive stages of the pipeline.
- 1 8. The apparatus of claim 7, wherein the two-wire interfaces transmit data
2 valid and data acceptance signals.
- 1 9. The apparatus of claim 1, wherein the start code detector is adapted to
2 introduce new tokens into the stream of video data at detected start code
3 sequences.

1 10. The apparatus of claim 2, wherein a portion of the stages of the
2 pipeline reconfigure themselves to process data in response to receiving
3 predetermined types of tokens.

1 11. The apparatus of claim 9, wherein the start code detector introduces
2 picture end tokens into the stream of video data.

1 12. The apparatus of claim 1, wherein the start code detector is a hardware
2 device.

1 13. The apparatus of claim 1, wherein the pipeline includes:
2 a Huffman decoder coupled to receive data from the start code
3 detector;
4 a token formatter coupled to data from the Huffman decoder;
5 an inverse modeler coupled to receive data from the token formatter;
6 and
7 an inverse quantizer coupled to receive data from the inverse modeler.

1 14. A method for decoding encoded video data, comprising:
2 receiving a portion of a video data stream in a multi-stage pipelined decoder;
3 inserting tokens into the received portion of the video data stream at least one
4 of the tokens being a search mode token;
5 detecting the search mode token in a special one of the stages; and
6 searching for a start code token in the video data stream in response to
7 detecting the search mode token in the special one of the stages.

1 15. The method of claim 14, further comprising:
2 making a random access into the data stream to receive the portion of the
3 video stream; and
4 wherein the search mode token is inserted in response to making the random
5 access.

1 16. The method of claim 15, wherein the random access results from one
2 of an error and a channel switch.

1 17. The method of claim 15, further comprising:
2 reconfiguring stages of the decoder to decode video data in response to
3 detecting the start code token.

1 18. The method of claim 17 wherein: searching recognizes start code
2 tokens corresponding to video data encoded according to one of the standards
3 MPEG, JPEG, and H.261.

1 19. A pipelined decoder for processing encoded video data, comprising:
2 a pipeline having a plurality of stages for receiving and decoding a portion of a
3 video data stream;
4 a means for inserting tokens into the video data stream at least one of the
5 tokens being a search mode token; and
6 a start code detector to search for start code tokens in the video data stream
7 in response to detecting the search mode token.

1 20. The decoder of claim 19, wherein the means for inserting inserts a
2 search mode token into the data stream in response to making a random access into
3 the video data stream.

1 21. The decoder of claim 20, wherein the random access results from one
2 of an error and a channel switch.

1 22. The decoder of claim 20, wherein a plurality of the stages reconfigure
2 themselves to decode video data in response a start code token.

1 23. The decoder of claim 22, wherein the start code token corresponds to
2 video data encoded according to one of the standards MPEG, JPEG, and H.261.

1 24. The decoder of claim 20, further comprising:

2 a semiconductor substrate, the pipeline, means for inserting and start code
3 detector being located on the substrate.

1 25. A system for decoding video data into picture frames, comprising:
2 a start code detector to search for a start code sequence in a stream of video
3 data in response to detecting a search mode token therein and to convert a portion
4 of the stream of video data into data tokens in response to detecting a start code
5 sequence in said stream of video data; and
6 a decoder coupled to receive the data tokens from the start code detector and
7 to decode the received data tokens into picture frames, the decoder capable of
8 decoding multiple standards.

1 26. The system of claim 25, further comprising an inserter of search mode
2 tokens coupled to insert search mode tokens into the stream of video data.

1 27. The system of claim 25, wherein the standards include two of JPEG,
2 MPEG, and H.261.

1 28. The system of claim 25, wherein the decoder further comprises:
2 a Huffman decoder;
3 an inverse quantizer coupled to the Huffman decoder; and
4 an inverse discrete cosine transformer coupled to the inverse quantizer.

1 29. The system of claim 25, wherein the decoder is a hardware device.